Distance measuring between multiple units
The front unit (the current leader unit), unit A, sends a signal through the other devices, which works as signal amplifiers, so all the devices are able to communicate.

The signal that is weakest, i.e. the biggest distance between two devices, will then be quantified to e.g. one of four led lights, which in this example is green, because all the devices are close to each other.
The front unit (the current leader unit), unit B, and unit A, have made some distance between the rest of the units, hence the signal is weaker, which lights up two of the LEDs to warn about the increased distance. All of the units displays for the biggest distance between two devices, which is why the increased distance between unit A and unit C is shown on all of the devices.
The distance between unit A and C have increased even more, which is why the third warning light is turned on, to increase awareness about the increased distance.
The distance between unit A and C is now so big that the fourth and last light is turned on, perhaps a sound alarm is turned on too, so the devices warn about the huge distance between the devices.
Even though the is an increased distance between unit A and B, it is still the biggest distance that the units show, i.e. the distance between unit A and C.
Other thoughts about the project:

It doesn’t need to be the same number of units, nor the same units that goes on each trip, so they need to be able to sync of some sort.

However, if it is a group who travels together often, then it will be annoying to sync every time, so perhaps some sort of setting, which will normally sync with some certain devices if not changed?

The signal needs to be omnidirectional, since the hikers doesn’t travel in a linear path.

The signals won’t “see” each other directly, so some sort of laser won’t work, nor will ultrasound probably, since could be traveling near other sound making disturbances, e.g. cars.

The signals could also be disturbed by other signals, like telephone tower signals.

It needs to not be very energy consuming, since the hikers could be on very long trips.

We have thought about using the RSSI dBm measurement of some sort to measure the distance.